Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-03

CSX Transportation (CSX)
Bieber, California
January 17, 2006

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2006-3

1.Name of Railroad Operating Train #1 CSX Transportation [CSX]	1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. R4019845
2.Name of Railroad Operating Train #2 CSX Transportation [CSX]	2a. Alphabetic Code CSX	2b. Railroad Accident/Incident R4019845
3.Name of Railroad Responsible for Track Maintenance: CSX Transportation [CSX]	3a. Alphabetic Code CSX	3b. Railroad Accident/Incident No. R4019845
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident Month 01 / Day 17 / Year 2006	6. Time of Accident/Incident 10:20:00 ☑ AM ☐ PM

7. Type of Accident/Indicent (single entry in code box): 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other (describe in narrative) — **04**

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
15	2	1	0	Great Lakes

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
New Castle, PA	57.2	N/A	PA	LAWRENCE

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark	Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
45 F		2		2		2

21. Track Name/Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 3. East	Code
Track 17 Ext / Lead		1	0		4

OPERATING TRAIN #1

25. Type of Equipment Consist (single entry): 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

26. Was Equipment Attended? 1. Yes 2. No — Code: 1

27. Train Number/Symbol: Q 641-16

28. Speed (recorded speed, if available) — R - Recorded; E - Estimated: 9 MPH — Code: R

30. Method(s) of Operation (enter code(s) that apply): a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other (Specify in narrative) Code(s): n N/A N/A N/A N/A

30a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter — 0

29. Trailing Tons (gross tonnage, excluding power units): 3730

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	N/A	41	yes
(2) Causing (if mechanical cause reported)	0	0	N/A

32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	0

33. Was this consist transporting passengers? (Y/N): N/A

34. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	35	0	6	0	0
(2) Total Derailed	3	0	0	0	0

36. Equipment Damage — This Consist: 101613

37. Track, Signal, Way, & Structure Damage: 18050

38. Primary Cause Code: H306

39. Contributing Cause Code: N/A

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
N/A	1	1	1

Length of Time on Duty

44. Engineer/Operator: Hrs 10 Mi 21

45. Conductor: Hrs 10 Mi 19

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	0
Nonfatal	N/A	0	0

49. EOT Device? 1. Yes 2. No — 2

50. Was EOT Device Properly Armed? 1. Yes 2. No — 2

51. Caboose Occupied by Crew? 1. Yes 2. No — 2

OPERATING TRAIN #2

52. Type of Equipment Consist (single entry): 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

53. Was Equipment Attended? 1. Yes 2. No — Code: 1

54. Train Number/Symbol: Q 352-17

55. Speed (recorded speed, if available) — R - Recorded; E - Estimated: 5 MPH — Code: R

57. Method(s) of Operation (enter code(s) that apply): a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons (gross tonnage, excluding power units)	c. Auto train stop d. Cab e. Traffic f. Interlocking	i. Time table/train orders j.Track warrant control k. Direct traffic control l.Yard limits	o. Positive train control p. Other (Specify in narrative) Code(s)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
12160			n N/A N/A N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	CSXT4 96786	125	N/A		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	N/A	60. Was this consist transporting passengers? (Y/N)		N/A

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote	62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	3	0	0	0	0	(1) Total in Equipment Consist	9	0	9	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	4	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
103248	0	H306	N/A

Number of Crew Members				Length of Time on Duty	
67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen	71. Engineer/Operator	72. Conductor
1	0	1	0	Hrs 7 Mi 25	Hrs 7 Mi 25

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	0	0	0
Nonfatal	0	0	0

76. EOT Device? (1. Yes 2. No)	77. Was EOT Device Properly Armed? (1. Yes 2. No)	78. Caboose Occupied by Crew? (1. Yes 2. No)
1	1	2

Highway User Involved

79. Type — Code: N/A
A. Auto B. Truck C. Truck-Trailer. D. Pick-Up Truck E. Van F. Bus G. School Bus H. Motorcycle J. Other Motor Vehicle K. Pedestrian M. Other (spec. in narrative)

80. Vehicle Speed (est. MPH at impact): N/A

81. Direction geographical) — Code: N/A
1.North 2.South 3.East 4.West

82. Position — Code: N/A
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

83. Equipment — Code: N/A
1.Train(units pulling) 2.Train(units pushing) 3.Train (standing) 4.Car(s) (moving) 5.Car(s) (standing) 6.Light Loco(s) (moving) 7.Light(s) (standing) 8.Other (specify in narrative)

84. Position of Car Unit in Train: N/A

85. Circumstance — Code: N/A
1. Rail Equipment Struck Highway User
2. Rail Equipment Struck by Highway User

86b. Was there a hazardous materials release by — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning	88. Signaled Crossing Warning (See instructions for codes) Code	89. Whistle Ban Code
1.Gates 2.Cantilever FLS 3.Standard FLS 4.Wig Wags 5.Hwy. traffic signals 6.Audible 7.Crossbucks 8.Stop signs 9.Watchman 10.Flagged by crew 11.Other (spec. in narr.) 12.None		1. Yes 2. No 3. Unknown
Code(s): N/A N/A N/A N/A N/A N/A N/A		N/A

90. Location of Warning Code	91. Crossing Warning Interconnected with Highway Signals Code	92. Crossing Illuminated by Street Lights or Special Lights Code
1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — N/A	1. Yes 2. No 3. Unknown — N/A	1. Yes 2. No 3. Unknown — N/A

93. Driver's Age	94. Driver's Gender Code	95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train Code	96. Driver Code
0	1. Male 2. Female — N/A	1. Yes 2. No 3. Unknown — N/A	1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative) — N/A

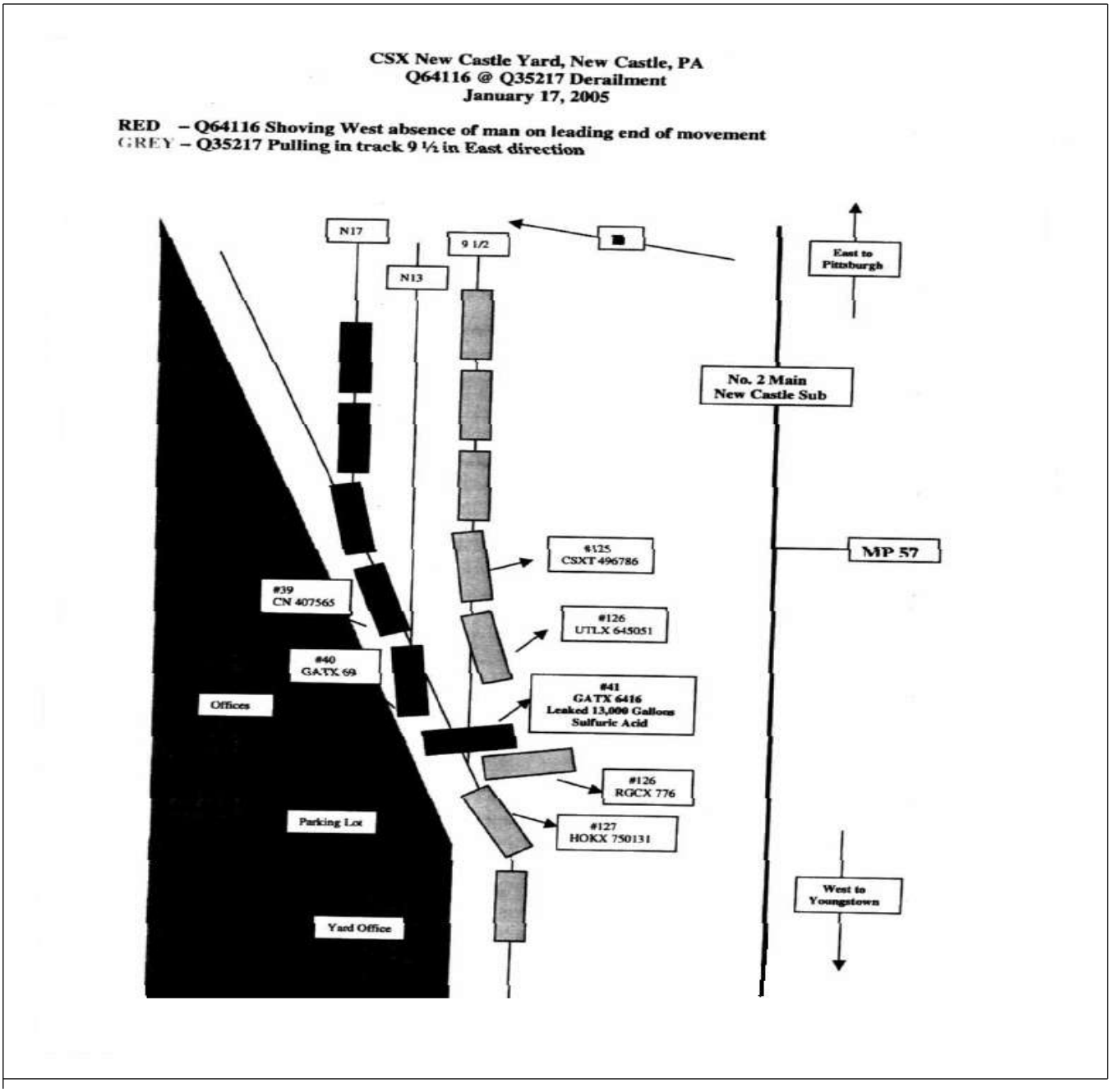
97. Driver Passed Standing Highway Vehicle Code	98. View of Track Obscured by (primary obstruction) Code
1. Yes 2. No 3. Unknown — N/A	1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other (specify in narrative) 8. Not obstructed — N/A

101. Casulties to Highway-Rail Crossing Users	Killed	Injured	99. Driver Was Code	100. Was Driver in the Vehicle? Code
	0	0	1. Killed 2.Injured 3. Uninjured — N/A	1. Yes 2. No — N/A
			102. Highway Vehicle Property Damage (est. dollar damage): 0	103. Total Number of Highway-Rail Crossing Users (include driver): 0

104. Locomotive Auxiliary Lights? Code	105. Locomotive Auxiliary Lights Operational? Code
1. Yes 2. No — N/A	1. Yes 2. No — N/A
106. Locomotive Headlight Illuminated? Code	107. Locomotive Audible Warning Sounded? Code
1. Yes 2. No — N/A	1. Yes 2. No — N/A

108. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.

HQ-2006-3.bmp



109. SYNOPSIS OF THE ACCIDENT

An inbound CSX freight train was shoving west into a yard track with the front portion of it's train when the rear cars struck the side of a second train moving east on an adjacent yard track at 10:20 a.m. on January 17, 2006. The accident occurred at Mile Post BG 57.2 on the Pittsburgh Subdivision in the CSX Rail Yard at New Castle, Pennsylvania.

There were no injuries but 13,000 gallons of sulfuric acid was lost from a heavily damaged tank car. The first train shoving west had 35 loaded cars and 6 empty cars while the second train (moving east) had 78 loaded cars and 74 empty cars. The first train was shoving 41 cars when the rear 3 cars collided with the 125th through 128th cars of the second train. 4 cars were derailed on the 2nd train. A total of 7 cars derailed. Equipment damage was set $204,861. Track damage was $ 18,050.

At the time of the accident it was overcast with a light drizzle. The temperature was 45° F.

The accident was caused by failure to protect the leading end of a shoving movement.

110. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew of train Q641-16 East included a locomotive engineer, a qualifying locomotive engineer and a conductor. The crew first went on duty at 12:01 a.m. EST January 17, 2006 at CSX Transportation's Collinwood Yard near Cleveland, Ohio. This was the away from home terminal for the crew members, and all had received more than the statutory off duty period prior to reporting for duty.

Their assigned freight train consisted of 2 locomotives, 86 loaded cars of mixed freight and 30 empty cars. Fourteen of the cars were loaded with hazardous material and there was one residue hazardous car. The train was 11, 205 feet in length and weighed 6,507 tons. The lead locomotive was CSXT 337 and the 2nd locomotive was CSXT 7690.

The crew had set-off 12 loaded cars at Lordstown, Ohio while en route. Train Q641-16 arrived at New Castle, Pennsylvania with 74 loaded cars and 30 empty cars. The crew was shoving its 41 lead cars west into the rail yard just prior to the accident.

At the time of the accident the engineer was seated at the controls on the south side of the lead locomotive. The conductor was standing on the rear platform of the second locomotive and the qualifying engineer was in the yard office.

The crew of train Q352-17 East included a locomotive engineer and a conductor. The crew first went on duty at 2:55 AM EST at CSX Transportation's Willard Yard near Willard, Ohio. This was the away from home terminal for the crew members, and all had received more than the statutory off duty period prior to reporting for duty.

Their assigned train consisted of 3 locomotives, 78 loaded cars of mixed freight and 74 empty cars. The train had 2 loaded hazardous material cars and 3 residue hazardous cars. The train was 12,160 feet in length and weighed 9,030 tons. The lead locomotive was CSXT 5227, with two additional locomotives CSXT 4834 and CSXT 2700. The crew did not pick-up or set-off any cars enroute.

At the time of the accident the engineer was seated at the controls on the south side of the lead locomotive. The conductor was seated on the north side, rear seat of the lead locomotive.

The crew of train Q641 and Q352 had been working with the same utility employee in New Castle. The utility employee went on duty at 7:59 AM EST on January 17, 2006 at New Castle Yard. The utility employee had received more than the statutory off duty period prior to reporting for duty. The employee was sitting in a vehicle at the west end of New Castle Yard prior to the accident.

The point of impact was at the west end of New Castle Yard where 17 track extension and 9½ track meet (also called N17 Lead and N95) Approximately MP BG 57.2.

THE ACCIDENT

The first train; Q641, was shoving west at 9 MPH on Yard Track 17 and 17 extension just prior to and at the time of the accident.

The second train, Q352, was moving east on Yard Track 9 ½ at a speed of 10 MPH approaching the accident location decreasing to a speed of 5 MPH at the time of

the accident.

Speed recorded by the event recorder of the controlling locomotive on each train. The maximum allowed speed in this area is 10 MPH. Trains must move at a speed that will "permit stopping within one-half the range of vision, short of a train, a car, an obstruction, a derail or an improperly lined switch."

At 9:39 a.m. Train Q641-16 arrived at New Castle and the crew was instructed, via radio, by the yardmaster to pull into the yard and move to the east end of track 1 & 4 where a utility person would make a cut behind the 41 lead cars and assist in lining the switches so the crew could set the lead 35 loaded cars and 6 empty cars on track 17 and 17 extension. The 41 cars were 2351 feet in length with a weight of 2351 tons. The yardmaster instructed the conductor to stay on the train and get off at the UN Interlocking (east end of the yard) to watch for the signal after the lead 41 cars had pulled by.

The utility employee and crew of Train Q641 communicated via radio as the train approached the east end of track 1 & 4. The utility person made the cut behind the lead 41 cars and told the crew to move east.

The conductor dismounted his lead engine at the westward signal at old UN; the engineer pulled the 41 cars east and the conductor stopped the train after the last car pulled by the signal.

The utility person lined the hand-throw switches from 26 track to 17 extension and 17 track, told the crew the switches were lined and instructed Q641 to back-up.

The utility person told the engineer to have the conductor ride the engines. The engineer relayed this information to the conductor via radio because the conductor could not hear the utility person over his hand held radio. The engineer starting shoving west past the signal into the yard; he stopped to pick up the conductor then continued shoving west with the conductor riding the 2nd (west) engine.

The utility person said no one was going the ride the lead end of the cars because the track was clear and the 41 cars would fit as track 17 would hold approximately 70 cars. The utility person said the Q641 crew was to stop their engines at the east end of 17 extension track.

The conductor said his crew was going to shove their cars into 17 track and he assumed the utility person was going to put air on the cars at the west end of the rail yard. The conductor said he thought the utility person was going to ride the shove. (The Q641 crew also had some discussion via radio concerning the conductor closing the air line valve on the east end of the cars and the utility employee opening the air line valve on the west end of the train.)

The utility person, after instructing train Q641 to back up, said he advised train Q 641 he was "out of here" and drove to the west end of the yard to work with eastbound train Q352.

The conductor of train Q641 said he could barely make out a car count over his radio as Q641 train shoved west but said he did hear: "80 cars, 50, 25 and 12 cars." The conductor of Q641 said he thought the car count was for his train.

Train Q641 crew did not stop at the east end of 17 extension; the Q641 continued to shove the 41 cars west the entire length of 17 track, onto 17 extension west into track 9 ½ striking the side of the 125th through 128th cars of the second train, Q352, which was moving east.

The crew of train Q641 did not realize they had struck train Q352 until they went into emergency. The conductor of train Q641 said he realized the leaking hazardous material car was Q641's car when he walked to his lead engine and looked at his train profile.

Train Q352 arrived at New Castle behind Train Q641. The yardmaster instructed Train Q352 to pull into yard track 9 ½ from the west end. The utility person was to stop the train to clear the west switch on 9 ½ track, he was to remove the end of train device (EOT), go forward, make a cut on the train (pull lead cars from rear train cars) and reinstall the EOT device. A yard crew was going to couple to the west end (rear cars) of Train Q352 and remove those cars from the track.

The crew of Train Q352 and yardmaster held a job briefing via radio and the utility person and Q352 crew performed a job briefing via radio. The utility person was giving eastbound train Q352 car counts. The conductor on Q352 said he first heard: "130 cars, 75, 50 cars and then 25 cars" at which time the train (Q352) went into emergency. Train Q352 was slowing at the east end of the yard to line the east end switch on 9 ½ track at the time of the collision.

The lead or west car of Q641 (41st car from locomotive train) was a loaded tank car containing sulfuric acid. The car, GATX 6416, contained 13,000 gallons of acid. A large hole was torn on the A end, lower right side of the car with most of the acid leaking onto the railroad right-of-way. Two additional cars from Q641 derailed. The 40th car was GATX 69, also a load of sulfuric acid (no leaks) and the 39th car from the engine was CN 407565 a box car loaded with paper.

The 4 cars that derailed on Q352 were all empties. The cars, positioned 125 through 128 from the engines, were CSXT 496786, UTLX 645051, RGCX 776 and HOKX 75013.

Total car damage was $204,861. Track damage was $ 18,050.

The equipment was rerailed by R. J. Corman Company and the environmental clean-up was handled by Specialized Professional Services. 13,000 gallons of contaminated acid and ground water was sent to Dupont Chemical Company with the contaminated soil and stone taken to an Ohio Landfill.

ANALYSIS AND CONCLUSIONS

The crew of train Q641 and utility employee were tested following the accident under carrier "cause testing' guidelines. All tests were negative.

No transcript of radio transmissions is available. Yard radio channels are not recorded at this location.

PROBABLE CAUSE AND CONTRIBUTING FACTORS

Proper and thorough job briefings were not conducted by employees when a utility was assigned and released from a train crew.

Employees failed to follow proper radio procedures in connection with backing movements and did not comply with distance to go requirements of radio rules.

It was found, through an investigation by the Federal Railroad Investigation, that the crew of Q641 and utility employee failed to protect the lead end of a shoving movement.